to SAVR (OR 3.5, 95% CI 2.4 – 5.1). Majority of the pacemaker implantations were done immediately after the TAVI procedure. Trans-femoral TAVI's were associated with higher risk (OR 8.6, 95% CI 3.1 – 28.3) of developing permanent heart block compared to transapical route (OR 2.4, 95% CI, 1.3 – 4.3). Core Valve use was associated with a higher risk of developing permanent heart block (OR 2.4, 95% CI 1.6 – 3.6) than Edward Sapiens Valve (OR 1.9, 95% CI 1.2 – 2.8) compared to SAVR.
Conclusions: Patients undergoing minimally invasive TAVI procedure have a four times higher risk of developing heart block needing pacemaker implantation compared to patients undergoing SAVR procedure.

TCT-771

Comparison of post TAVR paravalvular regurgitation between Edwards SAPIEN 3 and Edwards SAPIEN XT; early, single center experience

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Background: The Edwards SAPIEN 3 (Edwards Lifesciences, Irvine, CA, USA) transcatheter heart valve (S3 THV) incorporates a paravalvular sealing system with an active 3-dimensional coaxial positioning. No comparisons in clinical practice have been performed with its predecessor, SAPIEN XT (SXT) with regards to paravalvular aortic regurgitation (PAR), a predictor of future mortality in TAVR patients.
Methods: All patients implanted with an Edwards XT or S3 THV, from January 2013 to April 2014 in San Rafaelle Scientific Institute, Milan, Italy, were included in the current study. PAR was assessed using aortography and transthoracic echocardiography after TAVR.
Results: A total of 61 Edwards SAPIEN transfemoral TAVR were performed (14 S3 and 47 SXT). With the exception of higher percentage of baseline moderate/severe AR in the Sapiens 3 group (20% SXT vs. 64.3% S3, p=0.002) baseline demographics did not differ significantly between the groups (Table 1). Balloon aortic valve predilatation was performed more frequently in the SXT group (95.7% vs. 28.6%, p< 0.001). In both groups similar valve sizes were used (23/26/29mm: 38.3%/48.9%/12.8% S3 vs. 37.7%/35.7%/28.6% SXT, p0.355). Similar was also the percentage of postdilatation (23.4 % SXT vs. 21.4% S3, p=0.877). Final aortography revealed non/trace PAR in 92.9% S3 vs. 17.9% SXT; mild in 7.1% S3 vs. 67.7% SXT and moderate/severe in 0% S3 and 15.4% SXT (p< 0.001). Similar results were obtained when comparing final echocardiographic assessment for PAR. There was a trend for a higher device success (as per VARC-2) amongst S3 patients (100% vs. 83%, p=0.180).

Baseline Characteristics	Total(N=61)	Edwards SAPIEN XT (N=47)	Edwards SAPIEN 3 (N=14)	P-value
Age (years)	80.2±7.0	80.47±7.0	79.36±7.3	0.607
Female gender	45.90%	51.10%	28.60%	0.138
Diabetes Mellitus	26.20%	27.70%	21.40%	0.642
Previous myocardial infarction	9.80%	10.60%	7.10%	0.7
Previous PCI	21.30%	21.30%	21.40%	0.99
Previous CABG	21.30%	19.10%	28.60%	0.45
Logistic EuroSCORE (%)	18.6±14.9	18.3±14.9	19.8±15.4	0.746
STS Score (%)	5.4 (3.6 to 12.0)	6.3 (3.9 to 13.7)	4.4 (3.2 to 10.0)	0.11
Left ventricular ejection fraction (%)	53.2±13.3	52.1±13.7	56.8±	0.25
Mean aortic annulus (mm) CT	23.9±1.8	23.8±1.7	24.5±2.2	0.214
Minimum ilio-femoral diameter (mm)	7.0±1.2	7.2±1.2	6.6±1.0	0.156
Aortic valve area (cm2)	0.70±1.2	0.65±0.16	0.79±0.19	0.016
Aortic mean gradient (mmHg)	50.3±14.5	51.2±15.6	47.6±10.6	0.426
Aortic regurgitation ≥ moderate	30.50%	20%	64.30%	0.002
Mitral regurgitation ≥ moderate	32.20%	33.30%	28.60%	0.739

Conclusions: The S3 THV and delivery system appears to exhibit less paravalvular regurgitation when compared to its predecessor SXT.

TCT-772

Correlation Of Corevalve Implantation Depth With The Observed Post-Implantation Aortic Regurgitation And It's Impact On Necessity For Additional Intra-Procedural Techniques

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Background: Procedural technical features of CoreValve implantation have been shown to affect the short and long-term outcome after Transcatheter Aortic Valve Implantation (TAVI). The aim of this study was to evaluate the impact of CoreValve implantation depth on the short-term hemodynamic and procedural characteristics.
Methods: From June 2008 until February 2013, patients who had undergone TAVI with the CoreValve device, were retrospectively studied. The device implantation depth was evaluated in offline analysis by measuring the distance between the lowest coronary cusp calcium border, as depicted in the post-implantation aortography, and the lowest edge of the device frame (smaller measured distance indicating higher implantation depth, see image). The aortic valve regurgitation (AR) was evaluated after TAVI and classified as none, mild and moderate. Finally, the necessity of post-implantation balloon dilatation in order to achieve a better valve expansion was recorded.
Results: A total of 119 patients (mean age 80.6±5.3 yrs, 62 males) were finally enrolled. The implantation was performed either transfemoraly, or through subclavian route (12 patients). A statistically significant difference was found for the implantation depth between the three post-TAVI aortic regurgitation classifications (8.12mm for none AR, 7.95mm for mild and 6.27mm for moderate AR, p=0.046), indicating increased AR with higher device implantation. Similarly, patients who underwent balloon post-dilatation, had statistical significant higher implantation depth compared with those who didn't (6.39±3.2mm vs 8.14±2.5mm, p=0.012). The implantation depth remained an independent predicting factor of balloon post-dilatation necessity in multivariate logistic regression [OR:0.775 (0.64-0.938), p=0.009].
Conclusions: The CoreValve device implantation depth is strongly correlated with the post-implantation observed aortic regurgitation, as well as with the necessity of balloon post-dilatation. It seems that, concerning hemodynamic short-term outcome, operators should be even more careful in device implantation depth ensuring the optimal positioning.

TCT-773

Flow Characteristics of the CoreValve Self-Expanding Transcatheter Aortic Valve: Echocardiographic Assessment of In-Stent Pre-cusp Flow Acceleration

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Background: In-stent pre-cusp flow acceleration and its importance in the accurate echo assessment of the Sapien valve are well recognized with stent and valve cusps contributing to overall valve gradients. The echo flow features of the CoreValve have not been previously reported.
Methods: Pre-stent (P-S) and in-stent pre-cusp (I-SPC) CoreValve velocities were measured in 17 consecutive CoreValve pts. Valve sizes (mm) were 26(n=4), 29(n=6), and 31(n=7). Pulsed-wave (PW) Doppler velocity time integral (VTI) was recorded with sample volume placement at 2 levels: immediately apical to the stent (P-S) and within the stent just apical to the valve cusps (I-SPC). Effective orifice area (EOA) = (LVOT CSA X LVOT VTI)/AV VTI and Doppler velocity index (DVI) = LVOT VTI/AV VTI were calculated using both the P-S and I-SPC for LVOT VTI.